# Validation of Some Suprageneric Names in Podocarpopsida

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ABSTRACT. Upon learning that the genus *Pherosphaera* W. Archer bis (1850) was a synonym of the monospecific Tasmanian genus *Microcachrys* Hooker f. (1845), the family name Microcachrydaceae Doweld & Reveal (1999) was proposed for conservation giving it priority over Pherosphaeraceae Nakai (1938). The long-used name Pherosphaeraceae was consistently misapplied in the sense of *Microstrobos* J. Garden & L. A. S. Johnson (1951). Accordingly, a new family, Microstrobaceae, is validated and segregated into its own order, Microstrobales. In addition, for those who might wish to recognize the taxon at a lower rank within Podocarpaceae Endlicher, the names Microstroboideae and Microstrobeae are established to replace the already existing but consistently misapplied Pherosphaeroideae Pilger (1903, 1916) and Pherosphaereae Pilger (1903).

*Key words:* Microcachryaceae, *Microcachrys*, Microstrobaceae, Microstrobales, Microstrobeae, Microstroboideae, *Microstrobos*, *Pherosphaera*, Pherosphaeraceae, Pherosphaereae, Pherosphaeroideae.

In 1999, while validating and proposing several new suprageneric names in Pinophyta Cronquist, Takhtajan & Zimmermann, we proposed Microcachrydaceae Doweld & Reveal for the rare, monospecific Tasmanian genus *Microcachrys* J. D. Hooker (1845). At that time we were not aware that *Pherosphaera* W. Archer bis (1850) was a synonym of *Microcachrys* and that Pherosphaeraceae Nakai (1938) was the correct name for our new family.

The nomenclatural confusion began in 1857 when Joseph Dalton Hooker misapplied Archer's name to plants of a different genus. In this sense, *Pherosphaera* was used until 1951. Aware that the type of *P. hookeriana* W. Archer bis was based on the female reproductive structures of *Microcachrys tetragona* J. D. Hooker, Garden and Johnson proposed *Microstrobos* J. Garden & L. A. S. Johnson. They also published *Microstrobos niphophilus* J. Garden & L. A. S. Johnson as a new species for what had mistakenly been called *P. hookeriana* for nearly a century. When Nakai proposed his family name in 1938, he circumscribed the taxon to include only what is now known as *Microstrobos*.

In 1953, two proposals (Elliott, 1953; Barber, 1953) were published to conserve *Pherosphaera* J. D. Hooker (1857) over *Pherosphaera* W. Archer bis (1850). Later, Florin (1956), aware of the typification problem, placed *Microstrobos* in synonymy under *Pherosphaera* J. D. Hooker and proposed *Pherosphaera niphophila* (Garden & L. A. S. Johnson) Florin (Shinners, 1957). In 1958, the Committee for Spermatophyta rejected conservation of the later homonym and proclaimed *Microstrobos* to be the correct name for what had long been known as *Pherosphaera* (Rickett, 1958). Even so, *Pherosphaera* sensu J. D. Hooker continued to be used (e.g., Gaussen, 1974; Willis, 1973; Wielgorskaya, 1995; Melikyan & Bobrov, 2000).

Reveal and Doweld (2001) have proposed conservation of Microcachrydaceae so that the correct family name for the only genus in the taxon, *Microcachrys*, would be Microcachrydaceae rather than Pherosphaeraceae. Nonetheless, we recognize the necessity of establishing a family for *Microstrobos*, and thus propose Microstrobaceae. It is noteworthy that recently Melikyan and Bobrov (2000) used Pherosphaeraceae for this taxon, being unaware, like us, that *Pherosphaera* was a synonym of *Microcachrys* (which they placed in Microcachrydaceae). In addition, these authors proposed a new order "Microstrobales" Bobrov & Melikyan; however, Article 16.1 of the *Code* (Greuter et al., 2000) requires that all typified ordinal names be based on a validly published family name.

By establishing Microstrobaceae and validating Microstrobales following the classification scheme

proposed by Melikyan and Bobrov (2000), we hope to remove all references to the long-confused use of the generic name *Pherosphaera* for *Microstrobos*. However, we are fully aware that others consider *Microstrobos* to be a taxon within Podocarpaceae Endlicher (Conran et al., 2000; Hart, 1987; Kelch, 1997, 1998), and therefore validate both Microstroboideae and Microstrobeae. We knowingly—as permitted by the last sentence in Article 34.1 of the *Code* (Greuter et al., 2000)—take this action firstly to correct the misapplication of *Pherosphaera* for *Microstrobos* at the ranks of subfamily and tribe as suggested by Pilger (1903, 1916), and secondly to provide the necessary nomenclature in Podocarpaceae or whatever other family one might wish to use for these taxa.

It is essential to emphasize that judging by the original Pilger (1903) and Nakai (1938) descriptions, the names Pherosphaeraceae, Pherosphaeroideae, and Pherosphaereae were established for plants recognized now as belonging to the genus *Microstrobos* ( = *Pherosphaera* J. D. Hooker, 1857, non W. Archer bis, 1850). We hope that Microcachrydaceae will be conserved over Pherosphaeraceae but acknowledge that these changes will cause some confusion for researchers consulting the older literature. By correcting the names according to the *Code* (conservation of *Pherosphaera* Hooker f. over W. Archer bis was rejected in 1958!), we hope our modifications will promote nomenclatural stability in the future.

**Microstrobaceae** Doweld & Reveal, fam. nov. TYPE: *Microstrobos* J. Garden & L. A. S. Johnson, Contr. New S. Wales Nat. Herb. 1: 316. 1951.

Arbores sempervirentes, dioicae; folia acicularia, imbricata, in 4–5 lineas (nunquam decussata vel opposita) disposita; strobili masculi sessiles solitarii, grana pollinis 3-saccata; strobili feminei solitarii sessiles, ovoidei, in aggregationes 2–8, bracteae imbricatae, acuminatae; semen unicum, epimatium nullum.

Evergreen dioecious shrubs; leaves scale-like, imbricate, arranged in 4–5 rows but never decussate or opposite; male cones sessile, solitary, pollen with 3 air sacs; female cones solitary, sessile, ovoid, in aggregations of 2–8, bracts imbricate, acuminate; seed 1, epimatium lacking.

**Microstrobales** Melikyan & Bobrov ex Doweld & Reveal, ord. nov. TYPE: *Microstrobos* J. Garden & L. A. S. Johnson, Contr. New S. Wales Nat. Herb. 1: 316. 1951. Microstrobaceae Doweld & Reveal, Novon 11: 396. 2001.

Ab ordinibus Podocarpalibus Saxegothaealibusque epimatiis nullis differt.

An order differing from the Podocarpales and the Saxegothaeales in lacking an epimatium.

**Microstroboideae** Doweld & Reveal, subfam. nov. TYPE: *Microstrobos* J. Garden & L. A. S. Johnson, Contr. New S. Wales Nat. Herb. 1: 316. 1951. Microstrobaceae Doweld & Reveal, Novon 11: 396. 2001.

Arbores sempervirentes, dioicae; strobili masculi sessiles solitarii, terminales; strobili feminei terminales, solitarii sessiles, bracteae imbricatae, acuminatae; semen erectum, unicum, epimatium nullum.

Evergreen dioecious shrubs; male cones sessile, solitary, terminal; female cones terminal, solitary, sessile, bracts imbricate, acuminate; seed erect, one, epimatium lacking.

**Microstrobeae** Doweld & Reveal, trib. nov. TYPE: *Microstrobos* J. Garden & L. A. S. Johnson, Contr. New S. Wales Nat. Herb. 1: 316. 1951. Microstrobaceae Doweld & Reveal, Novon 11: 396. 2001.

Arbores sempervirentes, dioicae; folia acicularia, imbricata, in 4–5 lineas (nunquam decussata vel opposita) disposita; strobili terminales, sessiles, solitarii; semen unicum, erectum, epimatium nullum; numerus chromosomatum haploideus $n = 13$.

Evergreen dioecious shrubs; leaves scale-like, imbricate, arranged in 4–5 rows but never decussate or opposite; cones terminal, sessile, solitary; seed one, erect, epimatium lacking; $n = 13$.

*Acknowledgments.* We are grateful to K. N. Gandhi at Harvard University Herbaria who provided us with some of the literature for this paper, and to a reviewer who provided additional clarifications and suggestions. This research is a contribution to the Systema Spermatophytorum Project of the National Institute of Carpology (Gaertnerian Institution), Moscow. This study is part of the Index Nominum Supragenericorum Plantarum Project from the Norton-Brown Herbarium (MARY) and presented with the cooperation of the International Association for Plant Taxonomy and the National Agricultural Library, Beltsville, Maryland.

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